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THE OHIO STATE UNIVERSITY
COLLEGE OF EDUCATION
GEORGE F. ARPS, *Dean*

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Educational Research Bulletin

CLINICAL METHODS APPLIED TO TEACHING[1]

EDGAR A. DOLL
The Training School at Vineland, New Jersey

CLINICAL psychology now plays an important rôle in education. The scientific study of school children has spread from the feeble-minded to the gifted; from the gifted to the backward; from the backward to the emotionally unadjusted, with important emphasis on various special forms of mental and physical disability, mental hygiene, and vocational guidance. This scientific service in education is a necessary accompaniment of our system of compulsory education which has in our own generation brought into the public schools a class of children for whom the traditional education of the academies of a former generation were hopelessly ill-adapted. Clinical psychology and its overgrown brother, group-test classification, have become necessary educational services as a means of reducing school failure by adapting school children to our educational system.

This modern movement for the scientific study of school children has shed a great deal of light on the learning problems of school children. There have been experimental studies of the hereditary aspects of learning, such as familial ability or disability in arithmetic, music, and other school branches. We have an extensive literature on the relation of general intelligence to educational progress and a number of experimental studies on special disabilities, such as disability in reading and disability in arithmetic. Some attention has recently been paid to the rôle of emotion in learning and to the mental-hygiene aspects of classroom instruction. For many years we have known about the importance of growth periods in learning or the psychological moments at which certain forms of instruction can be offered to the best advantage. In other words, from the point of view of individual psychology we have an important body of knowledge on the learning abilities of school children.

All this emphasis upon the child's learning capacities should be supplemented by an equally searching analysis of the learning requirements of different kinds and degrees of subject-matter. Can clinical psychology make any important contribution to education by applying its analytical methods to the curriculum and to methods of teaching? Can we make a clinical analysis of the learning situation comparable to the analysis which we are accustomed to make of the learning person? In elaboration of this thesis I submit the following illustrative experimental studies.

[1]This article was given as an address before the Clinical Psychology Section of the Eighth Annual Ohio State Educational Conference.

If we accept the doctrine of mental levels, we must also accept its pedagogical corollary that there are definite educational limits for every child which are more or less biologically predetermined and to which we must make serious pedagogical readjustments. The idiot will never have an intelligence level exceeding that of a two-year-old normal baby, in consequence of which his educational adjustments will be limited to the rudiments of self-help, such as feeding, undressing, and controlling personal habits. The imbecile will never have a mental age higher than seven years, and in view of this fact it is hopeless to teach him any skilled manual work or any but the first-grade level of academic accomplishment. The moron is so incapable of abstract reasoning that his learning achievement is limited to the acquisition of specific information rather than general principles, and in his manual activities he can rarely go beyond the limits of unskilled manual labor. This principle of native limitation in learning extends to the average school child who is mentally incapable of going beyond the eighth grade, and whose training should therefore not be directed toward preparing him for high school but should anticipate his needs as a citizen below that level. On the other hand, we may quite properly anticipate the Ph. D. as the specific objective in a specific professional subject for those exceptional individuals who are mentally endowed for higher education and a professional calling.

Those of us who work with the feeble-minded cannot avoid these important issues. It is necessary for us to determine experimentally what the child can learn and will make use of when he becomes a man or a woman in years. We must therefore parallel our studies of the learning person with similar studies of the learning situations. We must analyze the sequence of learning steps and the degrees of difficulty of the learning tasks.

The Vineland laboratory has made a definite attempt to analyze certain learning situations from the point of view of the most natural sequence of steps, the general and specific requirements for mastering each step, and the measurement of progress in mastering each step. This process is both more essential and less difficult in manual and industrial learning than in academic learning, but it is our intention to apply the same procedure subsequently to the analysis of all classroom teaching as well as to industrial training. To this end we have already analyzed six industrial-training situations. This means that we have first of all set up the administrative divisions of the teaching problems according to the major phases of the entire training problem in each occupation. We have continued the analysis until we reach what are called the unit operations of each task. These unit operations are then studied for their requirements as to general intelligence, physique, manual skill, academic accomplishment, and personality. Each unit operation is scaled experimentally with reference to these requirements. The net outcome is a stepladder arrangement of the entire training problem for the whole subject, showing the various requirements for successful completion of each step. Since we already have an inventory of the learning capacities of the child, it is now possible to bring about the scientific adjustment of the teaching difficulty of the task to the learning capacities of the individual. We are expecting that this will positively increase the efficiency of our teaching and that it will make possible the

definite measurement of progress in learning. A monthly report of progress in the mastery of each unit operation for the subject being taught is obtained from each instructor. A most important consequence of this method of teaching is that it systematizes the teaching of the instructor and makes it possible for him to adapt his instruction to the child's capabilities.

Another example of the clinical method applied to teaching may be drawn from the field of discipline. If there is any one classroom problem which interests all teachers, it is the problem of discipline. The teacher's ability to control the conduct of her class is the measure of success set for her by the school administrator. However good her teaching may be from a pedagogical point of view, she is not considered successful unless she is master of discipline. The disciplinary control of a class has generally been considered as a fine art. I am suggesting that this art can be analyzed so that its mastery can be made more easy.

Perhaps the most important reason why classroom discipline is a problem is because most teachers fail to consider discipline as an integral part of the teaching situation. We have long since learned in clinical psychology that we must not attempt to test a child unless or until he is willing to be tested. The first task of the clinical psychologist is to get the child into the proper mood for testing. He must be willing to do his best and to cooperate to the utmost. How many teachers make willingness to learn the first condition of their teaching? The teacher usually assumes the child's willingness to learn and quite disregards his natural restiveness under ordinary classroom conditions. How many teachers know why a child is restless or why he misbehaves? How many create an attitude of joyousness toward learning which would reduce their disciplinary problems to the irreducible minimum? How many take the time to study the behavior reactions of their children with reference to natural tendencies instead of assuming that the child is maliciously troublesome?

In an institution the problem of conduct is much more serious than in the classroom because it is a family problem which covers the entire day. Instead of dealing with problems of discipline incidentally it therefore becomes important in an institution to make a frank study of the behavior adaptations of children showing serious misconduct.

At present we are making a study of conduct in which the conduct adjustments of children are viewed as a mode of behavior which may be taught. A specific analysis of the adjustment problems of the children in our institution has been made and a behavior score card devised for grading a child's improvement in conduct just as we would grade his learning in other fields. This analysis is based on fifteen major aspects of behavior, each of which has five gradations.[1] These gradations are formulated in terms of things which the child actually does and are not based on subjective opinions or estimates. Our experimental data show that it is possible to obtain statements as to what a child does regarding each of the fifteen major conduct items and to score him quantitatively under each of these items. The score gives not only a total behavior score for the individual but also shows in detail the specific items contributing to that

[1] Yepsen, L. N. "A Score Card of Personal Behavior," *Journal of Applied Psychology*, 12:140–47, February, 1928.

score. This has the pedagogical advantage of directing the instructor's attention to the specific character of the misconduct and, when supplemented by the clinical study of the individual, indicates the probable prospect of modifying the behavior.

The actual use of this method in our institution and in public-school classes for delinquents in Philadelphia has clearly indicated the possibility for teaching improvement in conduct habits and attitudes. Incidentally, the score card is based on an experimental survey of conduct reactions in the institution and furnishes conduct norms and limits which housemothers and teachers may use as guides or standards for improving the social behavior of children in the classroom, in the cottage, and in their leisure time.

In the same way we have devised a score card of industrial virtues intended to enable us to measure the industrial adjustment of our children independently of their degree of industrial skill. Like the behavior score card, this device is formulated in objective terms of specific acts and not on opinions or estimates. It is well known that success in any occupation over and above the technical requirements of the work depends upon attitudes and qualities not included under the headings of skill and general ability. Such characteristics as initiative, willingness, industry, and resourcefulness are demanded by every employer in addition to the professional or technical requirements of the occupation. Such a device might be adapted in the study of the learning reactions of children and also in the evaluation of teaching skill on the basis of general value to the service.

One of the fallacies of classifying children either according to general ability or according to clinical diagnosis is the assumption that all the members of such classified groups are homogeneous in all respects. And yet we know from experience that no two individuals are alike and that when a group is homogeneous in one respect, there is no guaranty that this homogeneity extends to those traits falling outside the major basis of classification. It is true that the correlation of abilities is a general rule, and that when children are classified according to some major consideration we may expect to find the children of that group more or less similar in other respects; but it is equally true that perfect correlation is seldom found. If we are to teach successfully we must constantly study the way in which children are different as well as the ways in which they are similar.

The importance of these observations is illustrated by a study which we are making of individual differences among young idiots. Here is a group of mental defectives who do not progress beyond the lowest limits of human intelligence. These individuals are in a condition of permanent infancy. They grow up physically but do not develop mentally. Classification tests, such as the Kuhlmann-Binet test, group these individuals as if they were all alike and suggest that the learning capacities of idiots are so unimportant that the classical term "vegetative type" is sufficient justification for ignoring their training.

I mention our study of this group because in the idiot less than fifteen years of age we have an absolutely rock-bottom level of teaching. Are these children capable of learning anything? Can we capitalize on their almost infinitesimally small learning aptitudes? In the past we have merely tried to inculcate some accomplishment in self-help.

Experience with a cottage teacher for the group of idiots less than fifteen years old has shown that many of these very low-grade feebleminded have quite unsuspected individual talents of sufficient importance for specific training. Comparative psychologists have studied the learning reactions of the paramecium, others have studied the adaptive reactions of the earth-worm, while still others are interested in the perceptual adaptations of the chimpanzee. In the idiot we have a level of behavior which bridges the gap between the highest animals and the lowest human species. The normal baby develops so rapidly that it is difficult to catalogue his learning abilities. His growth is so rapid that he outgrows his learning stages almost as rapidly as he enters them. In the idiot, however, we have a condition of permanent infancy representing specific levels of infant growth according to the degree of idiocy. Moreover, since the potentiality for further growth is removed, it is possible to make a protracted study of these permanently infant reactions at our leisure.

In this investigation we have discovered, by applying the developmental scales of Kuhlmann, Stutsman, and Gesell, that these idiots differ from normal babies in certain important respects, such as range of movement, strength, coordination, and sensitivity. These differences are important for specific training. It therefore becomes experimentally evident that the teaching problems for the idiot are not comparable to those of normal babyhood except in certain general respects. We find that the training of the idiot may be extended materially beyond the limits of normal babies of the same degree of intelligence. In studying the adaptive and perceptual reactions of these same idiots, according to the methods of Koehler and Yerkes, we find that they reveal a mode of learning quite independent of the level of learning shown in the usual mental tests.

If now we parallel this clinical psychology of idiocy with a clinical pedagogy of idiocy we find it necessary to analyze in minute detail the learning tasks which may be presented to them. For example, we wish to teach an idiot to put on his shoe. We find the following sequence of steps or degrees of success: (1) fumbles with shoe but tries to put it on, (2) gets toe of foot into toe of shoe instead of into heel of shoe, (3) gets shoe on properly, pulling out tongue, (4) hooks shoe getting wrong hooks, (5) tightens laces if already laced, (6) laces shoe but not in proper holes, (7) hooks shoe properly, (8) laces shoe getting proper holes, (9) gets shoe on with reference to proper foot, (10) makes first knot, (11) makes bow but fails to tighten, (12) completes second knot. Thus it is evident that instead of teaching an idiot to put on his shoe as one task it is necessary to break this general task into a number of steps which will be achieved only after specific teaching of the individual processes.

One of the more recent problems in the clinical psychology of school children is the problem of the emotional reactions of children toward teaching. We have expended and must continue to expend a great deal of energy and resourcefulness in the clinical analysis of the emotional reactions of children to classroom situations, but is it fair to find all the fault with the child? Is not some of the difficulty inherent in the emotional barrenness or emotional antagonism which ordinary classroom teaching methods either present or engender? In clinical psychology today we are laying a great

deal of emphasis on motives, incentives, and "drives." What urges to learning are stirred by the emotional appeals of teaching content, of subject-matter, and of ordinary methods of teaching? Whatever may be our theoretical attitude toward the doctrine of interest in education, we cannot escape the baneful effects upon children when teaching arouses antagonistic emotions. The clinical psychologist sees the consequences of such evils in individual children and has, I think, some moral obligation to indicate the reforms in teaching procedure which they suggest.

There are two great steps to successful teaching on the basis of emotional appeal. One is to take advantage of the natural appeal of the subject-matter based on its inherent values, and the other is to avoid a confusion of language facts with information facts. It is a mistake to assume that the requirements of good teaching are met when the children have been stirred to a proper emotional anticipation of the material to be taught. The material itself must also be worked up so as to present its smile to the child in order that the child may smile back upon it. Has not every child some right to know why a particular subject is being taught, what its advantages are to him, what its attractive features are, how it will make his life fuller and richer? This is actually done in good kindergarten teaching, but not in many other levels of instruction except where teaching is a fine art. It is a mistake to suppose that children of any age cannot appreciate the importance of mastering a particular subject if that importance is presented at the child's level of understanding. Why do we study history? What is the advantage of learning to write? What are the fascinating possibilities of arithmetic? What worlds are opened by reading? There is a natural fascination about every subject which, if properly presented, invites the child's closer acquaintance and arouses an eagerness for learning which immediately makes friends between the child and the subject-matter. A particular subject is no stern necessity to which the child must subordinate his individuality. Modern pedagogy has already eliminated much of the hatred toward school work which was so characteristic of children a generation ago. There is yet much to learn, and the clinical psychologist in the public school can do his part toward improving the emotional aspects of teaching by placing some of the responsibility on the subject and not all of it upon the child.

Perhaps the greatest single error in teaching which introduces emotional confusion among school children is in taking for granted the language of a teaching situation. Most adults fail to reckon with the language limitations of children, and most teachers fail to capitalize on the tremendous native language interest among children. The mastery of words and word-meanings is one of the pleasant accomplishments among normal children, and word-meanings should be an integral part of all teaching. The study of children has long since indicated the importance of vocabulary in the intellectual development of children. Let any teacher sit down with a child and review the mere vocabulary of her teaching, and she will have an experience that will be amazing. Children do somehow master these language facts in a rote sort of way, but how vastly richer and easier would be their learning if the vocabulary of teaching were guaranteed before the facts which our words are intended to convey are actually

presented. Any clinical psychologist working with special educational disabilities quickly becomes aware of the importance of vocabulary in teaching. Can we not somehow impart the significance of these discoveries to the teaching profession? Perhaps no single thing would make teaching easier than attention on the teacher's part to a frank survey of her own teaching vocabulary and the child's learning vocabulary.

It is both necessary and possible to analyze teaching just as it is possible to analyze children. Teaching has been a fine art, but teaching can be a science. With the tremendous modern growth of public education it becomes more and more necessary to provide technical methods of pedagogy. The number of artists is likely to be small and their distribution through any particular system rather scattered. As a rule, we shall find that the fine artists of teaching succeed because they intuitively appreciate these technical methods. The progress of teaching on a large scale demands a much greater number of artists in the profession than are now therein contained. For many teachers, teaching is therefore bound to be a technique rather than an art. Teaching as an art is apparently a native gift. Teaching as a science can be a specific acquisition. It is part of the contribution of clinical psychology to show that its methods can be extended from the study of the learning person to the analysis of the teaching situation.

A STATE HIGH-SCHOOL SCHOLARSHIP CONTEST FOR OHIO

H. H. DAVIS
Ohio State University

THE IDEA of scholarship contests is not new, in fact, one of the notable phases of schools in our grandparents' day was the holding of spelling bees and ciphering matches. These were not high-school contests, of course, and they applied to only a limited portion of the curriculum; nevertheless they were scholarship contests. With the development of physical training in our schools and the consequent emphasis on athletic contests the interest in spelling and arithmetic matches declined; and the present trend toward high-school scholarship contests merely represents a swing back toward an earlier interest. Such contests are not expected, however, to detract from the attention given to athletic events, nor has such a situation resulted in the states where the contests have been developed.

How widespread the interest in high-school scholarship contests has become is shown by a recent study covering thirty-eight states.[1] Only nine of those states report no movement for the development of scholarship contests. The agency promoting such contests is most often the state university or one of the state colleges. The next agency in order of frequency is an association created or adapted for the specific purpose, and the third is the state department of education. The contests are some-

[1] Ray G. Wood. "An Appraisal of Methods for Promoting Scholarship Contests in the Secondary Schools of the United States." A thesis presented for the degree of Master of Arts in School Administration, 1928. On file at the Library of the Ohio State University.

times given in connection with other events, such as athletic meets or debates. Occasionally they are made the basis of selection for scholarships to higher institutions of learning, but they are usually considered worthy ends in themselves.

Although the subjects in which contests are conducted vary with local emphasis from state to state, these are usually in such standard subjects as English, Latin, mathematics, and history. The idea is to develop the academic subjects rather than the special subjects—probably because contests have already been developed in the special subjects. Examples of the latter may be found in the grain- and stock-judging contests conducted in connection with agricultural courses and the typewriting contests in the commercial field. There is no evidence that the schools are trying to reduce the interest in these special-subject contests, but rather they seem to look toward the expansion of the academic subjects through scholarship contests.

One reason for the absence of formal competition among the academic subjects is that they have been at a disadvantage in the contest field because of the lack of accurate measuring instruments for determining proficiency in them. This difficulty has been largely removed by the recent improvement in objective-test methods. Some of the aims of this type of contest, as they now appear to be developed, are:

1. To bring to the academic subjects the benefits of intensified interest growing out of the natural competitive instincts of children.
2. To make it possible for the child who excels in scholarship to attain a position of honor among his fellows comparable to that attained by those who excel in athletics.
3. To bring about a comparison of school with school on the basis of the things for which the schools primarily exist rather than on that of incidental or extra-curricular activities.
4. To dignify scholarship within the state and to give the contestants a vision of the importance of education as a state enterprise.
5. To promote improvement of curriculum materials over the state, through directing the attention of school people to irregularities and weaknesses in subject materials.

The extent to which these objectives are attained in practice can best be determined by statements from those who have tried the plan. Such statements are given in the study previously mentioned. The persons concerned in the study listed the merits derived from the scholarship contests. Eighty percent or more of the responses give the following values: the bright pupil is challenged to do better work; the teacher is more interested in the quality of her work; and the teachers become interested in the use of objective tests.

Values noted in some seventy percent of the responses are: the pupil's interest in school work is increased; assistance is given in developing scholarship; better teaching results; one of the most desirable kinds of school publicity is furnished; standards are set up for teachers and pupils; and scholastic attainment assumes importance in the minds of the pupils and people of the community comparable with extra-curricular activities. Between sixty and seventy percent give the two following merits: the teacher's interest in school work is broadened and enlivened; the attitude of the class toward school work is improved. The

values assigned by some fifty percent of the responses are: the average pupil is frequently among the stronger in the contest; educational emphasis is placed where it belongs; a wholesome feeling between school officials is created.

Some other points are noted by less than fifty percent of the replies. Among them are, "Help bring about a reorganization of subject-matter," "Increase community interest in school work," and Jefferson's old idea of finding the bright pupil and leading him to go on to higher education.

The educational authorities of Ohio have not been blind to the advantages of the scholarship contest, but have been watching its development and perfection. They now feel the time has come to undertake the project for the benefit of our own high schools. In accordance with this idea, the Ohio State University and the State Department of Education are cooperating to inaugurate in Ohio a State High-School Scholarship Contest for the coming school year. A tentative plan has been arranged and the following subjects will be covered by the contest: mathematics—algebra and geometry; English—first, second, third, and fourth year; science—general, physics, and chemistry; social science—history and civics; foreign language—Latin and French. The Department also plans to conduct a contest in vocal music.

The schools of the State will be divided for the contest into two classes—Class A, those having an enrollment of five hundred or more, and Class B, those having an enrollment of less than five hundred. Separate sections of the state contest will be conducted for each of the two classes. County elimination contests will be held in each subject for the Class B schools, since the number is large enough in each county to make such contests practicable. The winners from the county contests will meet for the State Contest at Columbus. Because of the smaller number of schools in the A group—about one hundred—elimination contests will not be necessary. They will therefore send representatives direct to their section of the State Contest. The county contests will be held in March and the State Contest will be held at Columbus in April—the exact dates to be determined later.

The tests to be used will be constructed by competent test builders from materials submitted by teachers in the respective fields. By this means assurance will be given that the questions are in accord with current teaching practice over the state, and at the same time that the tests have a high degree of reliability.

Further details of the plan will be announced from time to time. It is hoped that the school people of the state will assist in making the contest popular and thus rendering it of maximum usefulness to our high-school pupils.

Some interesting statistics have been complied concerning the Eighth Annual Ohio State Educational Conference held last April. Attendance at the thirty-eight sec ional meetings, in which one hundred forty persons took part, varied from seventy-five to two thousand. All but one of the sections had out-of-state speakers. The total registration was 4,496, an increase of 333 over that of 1927. Twenty-nine cities had twenty or more registrants, and more than half the incorporated towns and cities and all but four of the counties in the State were represented. Sixty-seven people from outside Ohio were among those registered.

Ohio State University

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WE pause for one moment in proud regret. Dr. Buckingham, who was largely instrumental in founding the EDUCATIONAL RESEARCH BULLETIN and who continued as its editor until it was well into its seventh volume, has resigned from Ohio State University to accept an important editorial post with Ginn and Company and a lectureship in elementary education at Harvard Graduate School of Education. Since Dr. Charters, the newly appointed Director of the Bureau of Educational Research, does not enter upon his duties until September 10, in this interval between the old and the new, we take one backward glance.

Lack of perspective may distort our image of the retiring editor, for it is difficult to see a man in his true proportions when one has been closely associated with him. To his editorial duties on the *Journal of Educational Research* and the EDUCATIONAL RESEARCH BULLETIN he could spare but a small share of his time, yet through these two channels his influence spread to the four corners of the state and to distant parts of the nation. Persons of recognized rank in education, as well as ambitious novitiates, sent him manuscripts for his criticism. Aspiring authors asked his opinion on their proposed schemes of organization, while others sent him the complete manuscripts of their books for his appraisal. Dr. Buckingham met these requests generously, examining the most trivial manuscript with unprejudiced enthusiasm. The memory of the amount of this gratuitous editorial effort makes him, for the moment, seem all editor.

Dr. Buckingham was as well professor, administrator, author, and student of research. Courses in statistics, methods of research, and problems of the elementary principal and supervisor are listed over his name in the annual catalogues of the College of Education. The brief descriptions given do not tell of a great teacher—the simplicity in which the most technical facts were expressed; the breadth of his experience; the soundness of his educational principles; the versatility with which he borrowed from the classics, history, and mathematics for the illustrations which enlivened his lectures.

Many graduate students came to Ohio State with the avowed purpose of "studying with Buckingham." Those who worked out their research problems under his supervision were especially favored. His latchstring was always out. His aptitude in suggesting new methods of attacking problems, his versatility in interpreting statistical data in practical school ways, and his information on educational problems of which he modestly avowed he knew nothing will never be forgotten by these fortunate neophytes. Dr. Buckingham chose to spend much of his facility in research and his breadth of educational experience in the training of these younger workers. Perhaps he chose well, for in that choice he has emulated the greatest teachers of every age.

J. H. M.

NEW TESTS

According to the author of the Detroit Advanced First-Grade Intelligence Test, Harry J. Baker, the test was designed "to furnish a mental examination for pupils in Detroit who were too far advanced to take the regular Detroit (Beginning) First-Grade Intelligence Test, and also to test pupils for whom the Detroit intelligence test which is used in grades above the first proved too difficult." No demands are made on reading ability in this test for its seven separate parts are purely pictorial. From thirty to thirty-five minutes are required for administering the test. Data are given on the methods and procedure of standardization and testing for reliability, norms are quoted, and mental-age equivalents are furnished on the direction and scoring sheet. The World Book Company is the publisher.

The Denny-Nelson American History Tests which have just been published by the World Book Company attempt to measure the historical information of seventh- and eighth-grade pupils and to improve instruction in history. Part I of the test covers the period of discovery, exploration, and colonization, ending with 1789; while Part II covers the national period of American history from 1789 to the present. The tests are wholly objective. Medians and quartiles are given for both tests. The norms given in the Manual of Directions are based on 2,431 cases for Grade VII and 3,144 cases for Grade VIII.

The Wilson Fact Inventory and Diagnostic Tests in Arithmetic, prepared by G. M. Wilson and published by the University Publishing Company, Lincoln, Nebraska, aim to help the pupil in his study of arithmetic and to aid good teaching. The tests cover all the essential facts needed for success in the fundamentals and cover work from Grade II through VIII. These are not time tests; their aim is 100-percent accuracy within a reasonable time. The median time of completion is given for two groups of pupils who took the tests. Summarized results are furnished in terms of scores by grades, scores by ages, time limits, and distribution of errors. Four tests are given in addition, three in subtraction, one in multiplication, and two in division.

The Stanford Educational Aptitudes Test by Milton B. Jensen, which has recently been published by the Stanford University Press, is a comparative measure of one's ability as a teacher, a research worker in education, and a school administrator. It offers reliable estimates of the field of education in which one may reasonably expect to do his best work. The aim is to guide the student into the work which he can most effectively perform, and to aid the teacher-training school in grouping its students according to their tastes and interests. The validity and reliability of the tests have been determined with some care; the members of the criterion group were selected on the basis of ratings by from one to seven judges. According to the author, differences measured by the test are independent of age, sex, professional training, and professional experience.

NEW APPOINTMENTS IN THE COLLEGE OF EDUCATION

BUREAU OF EDUCATIONAL RESEARCH

DR. W. W. CHARTERS has been appointed director of the Bureau of Educational Research to succeed Dr. B. R. Buckingham, who resigned on June 30 to take an important editorial position with Ginn and Company at Boston. Dr. Charters has had extensive administrative experience; twice he has been dean of schools of education—at the University of Missouri and also at the University of Illinois—and he was Dean of the Graduate School at the University of Pittsburgh during 1924–25. His influence as an educator is unquestioned; for there are few of the present generation of elementary teachers who have not spent many hours with his two books, *Methods of Teaching* and *Teaching of the Common Branches*, both of which have been in continued use for almost two decades.

Convinced of the pertinence of activity analysis as a means of determining curricular content he became in 1918 the Director of the Research Bureau of Retail Training at Carnegie Institute of Technology—a bureau organized by seven stores of Pittsburgh for the careful study of personnel problems. The next six years were spent in the development of his job-analysis technique as a means of determining the instruction needed by apprentices in many industries. Two extensive curricula—The Analysis of Secretarial Duties and Traits, and Material for a Pharmaceutical Curriculum—were the products of this time of investigation.

Perhaps the best known of his more recent curricular investigations—begun while at the University of Chicago—is the library-curriculum study which Dr. Charters is directing for the American Library Association. He has been assisted in this investigation by a professional staff of librarians and an advisory committee chosen from the faculty members of the several library schools of the country. The job-analysis technique has been used to determine the necessary education for librarianship. The results of these analyses are to be published as textbooks for libraries and for library-school students.

Dr. Charters has just completed with the collaboration of Dr. Douglas Waples a teacher-training curriculum which is the result of the most extensive analysis he has yet made. For use in this investigation, which was financed by a subvention from the Commonwealth Fund, lists of activities were gathered from hundreds of teachers throughout the country. These activities were analyzed, evaluated by teachers of recognized pre-eminence, and classified in many useful ways. The report of this extensive analysis of the teacher's job will be ready for circulation during the fall.

Thus to the varied demands of his new office Dr. Charters brings a happy combination of administrative experience and facility in research.

The new year opens with the appointment of three new research assistants in the Bureau of Educational Research. Mr. J. A. Baer, who held one of the assistantship positions during the past two years, completed his work and received the Doctor's degree at the convocation at the close of the Summer Quarter. Meanwhile, he had accepted a position in the Division of Measurements in the New York State Department of Education and began his duties there on July 1.

Mr. J. L. La Poe, who filled the other assistantship resigned at the close of the Summer Quarter.

Mr. Rhue E. Green, who is a graduate of the two-year course at the State Normal School in Peru, Nebraska, and who received his B. A. and M. A. at the University of Nebraska, has assumed his duties as research assistant to take the place of Mr. La Poe. Mr. Green was recommended to us by Dr. H. C. Koch, who was research assistant of the Bureau during the years 1924-26. Mr. Green has had eight years of public-school experience, five of which were in the superintendency, and comes most enthusiastically recommended by men in the University of Nebraska.

Mr. W. K. Wilson, who for the past three years has been the superintendent of schools at Waynesfield, Ohio, comes to the Bureau as successor to Mr. Baer and research assistant to Dr. Ashbaugh. Mr. Wilson received his Master's degree at Ohio State University in 1924. His successful work in the field, as well as the high quality of his work in the University especially recommended him to us for this position.

Miss Florence Morgan will be a third research assistant in the Bureau of Educational Research. She comes to Ohio State University from the University of Chicago where she has been doing graduate work. Miss Morgan was graduated from Rockford College with the B. A. degree and received her Master's degree at the University of Chicago. She has had experience as a teacher and supervisor of mathematics in high schools and as Dean of Women in Morton Junior College. During the past year she has been assisting Dr. Charters on an analysis of the duties of administrative officers in public schools, under a subvention from the Commonwealth Fund.

DEPARTMENT OF SCHOOL ADMINISTRATION

Dr. H. H. Davis has been appointed Assistant Professor in the Department of School Administration on a cooperative basis, for one-half of his time will be devoted to the State Department of Public Instruction. He will teach in the Fall Quarter of 1928 and the Summer Quarter of 1929.

Dr. Davis recently received the Ph. D. degree from the University of Iowa, where he did his undergraduate and Master's work. For a number of years he taught in the rural and village schools of Iowa and was superintendent of schools in Carrollton, Illinois, for a year. During the past four years he has been head of the Division of Records and Reports in the school system of St. Louis, Missouri. To school finance and secondary education he has given particular attention. The first statewide, high-school scholarship contest in Ohio will be organized and directed by Dr. Davis this year.

Dr. W. J. Osburn, formerly Director of the Division of Tests and Measurements in the Wisconsin State Department of Education, is now associated with Ohio State University as a Professor in School Administration. He, too, will give half of his time to work in the State Department of Public Instruction. His B. A. degree was received from Central College, his M. A. from Vanderbilt University, and his Ph. D. from Columbia University.

Dr. Osburn had considerable experience in the field of college teaching before he joined the staff of the Wisconsin State Department of Education. Between 1907 and 1915 he served as a superintendent of schools. He carried on extensive studies with diagnostic testing in arithmetic while in Wisconsin. As a result of such

investigations, he compiled material on remedial work which is given in his book, *Corrective Arithmetic*. With Dr. Buckingham, he is a joint author of the series of *Searchlight Arithmetics*.

DEPARTMENT OF PRINCIPLES OF EDUCATION

The Department of Principles will add three members to its staff with the opening of the Fall Quarter. These are Professors Amy Bronsky, Laura Zirbes, and Howard Francis Seely.

Miss Bronsky and Miss Zirbes are specialists in elementary education. Miss Zirbes will devote her time to instruction in the intermediate field on a half-time basis, while Miss Bronsky will give her whole time to the primary field. The State Department of Public Instruction has engaged Miss Zirbes for the other half of her time.

Miss Bronsky leaves a professorship at the State Teachers College of Superior, Wisconsin, to come to Ohio State University. She has had experience both as a teacher and supervisor of elementary teaching. For several years she was an inspector of elementary grades for the Wisconsin State Department of Education. From the University of Wisconsin she received her undergraduate degree; from Columbia University, the M. A. degree in supervision of elementary education; and has practically completed her doctorate work at Columbia University.

Miss Zirbes has had ten years of teaching experience in the elementary grades, chiefly in Cleveland, Ohio. She has also had considerable training in college teaching—at Teachers College, Columbia University, George Washington University, University of Chicago, University of Cincinnati, and George Peabody Teachers College. Her B. S., M. A., and Ph. D. degrees she received from Columbia University.

A number of important studies in reading have been made by Miss Zirbes. One of these is her Doctor's dissertation, *Comparative Studies of Current Practice in Reading with Techniques for the Improvement of Teaching*, which is now in press. She collaborated with Dean W. S. Gray, of the University of Chicago, in the preparation of material on the improvement of practice in reading, and is now cooperating with a group of twelve educators on a book to be entitled, *Supervision in Elementary Schools*.

Professor Seely, who comes to the University from the John Burroughs School, St. Louis, will direct the supervision of student teachers in English. Professor Seely is well known for his work in the field of the teaching of English. During the past five summers he has offered graduate courses in the teaching of English at Teachers College, Columbia University. His appointment in the Department of Principles of Education carries forward one step more the policy of the Department to have the work in student teaching come under the direction of specialists in subject-matter who have had rich experience in the secondary field.

Dr. Seely received his Bachelor's degree from the University of Michigan and his M. A. in English from Columbia University. His M. S. in Education was also granted by Columbia University. His work for the doctorate is practically completed. For two years he was head of the English department in the high school at Goshen, Indiana; for five years, director of English in Scarborough School; and for the past five years has served in a similar capacity in the John Burroughs School.

THE PRICE OF SPEED PRESSURE IN THE LEARNING OF NUMBER

GARRY CLEVELAND MYERS
Cleveland School of Education

TWENTY-ONE children in Grade I-A were taught, through a wide variety of concrete situations, the meaning of the addition process and the number concepts up to 20. For ten minutes each day, during one school month, they were given number experiences by Miss De Witz, a demonstration teacher in the observation school of the Cleveland School of Education. In that time they were taught number meanings, the meaning of "more" and "less," and the process of combining smaller numbers to get larger numbers. In this period of time, however, they were not taught addition of any combinations as such. They learned, for example, that by putting 3 and 4 together they got a larger number and, by counting, that this larger number was 7; but they were not set to counting "three birds and four birds are seven birds," "three pickles and four pickles are seven pickles," or kept upon this combination with a view to remembering it. Instead, they learned to put 5 and 2 together, then 4 and 4, 3 and 6, and so on. In this manner they were taught the meaning and the *modus operandi* of addition without the specific number facts. All the children learned to write the numbers through 10.

Then the children were turned from all counting activities to mechanical learning of number facts during a two-months period, ten minutes each day. For example,

$$\begin{array}{r} 3 \\ 4 \\ \hline 7 \end{array}$$

appeared on one side of a small card. This side was known as the learning side. On the other side of the same card was,

$$\begin{array}{r} 3 \\ 4 \\ \hline \end{array}$$

which was known as the test side. Each child had a card, and each began with the learning side of the card turned up.

Miss De Witz slowly read the number fact, "3 and 4 are 7," while each child looked at it on his card. Several children read it aloud individually, and finally the class read it together. Then several children who the teacher was sure knew this number fact were called upon individually to give the whole number fact from the test side. Great caution was exercised by the teacher to avoid haste, carelessness, and errors.

On the first day only three number facts were studied and learned. On each succeeding day all the old combinations were restudied and retested, and but few new ones were added.

After the children had mastered the processes of learning, relearning, testing, and retesting, they were guided to study alone, to test themselves, and to test each other. The teacher guarded against speed and against taking chances, and directed them in careful accurate learning. The pupils soon learned not to attempt an answer to the test side when in doubt. They also learned to ascertain when they did not know the answer and to criticize their own associations accurately before giving verbal expression to them. The learning process was so directed that the teacher was practically certain no

child counted during the learning stage.

At the end of this learning period, the twenty-one children were given a mimeographed sheet on which appeared the sixty-three combinations to be answered. There was no time limit. Eighteen children answered all of them correctly, three omitted from one to five answers, but not one child wrote a wrong answer. This gives fairly conclusive evidence that children can be taught to master addition facts with 100 percent accuracy.

Almost two years later, ten of the eighteen children, the ten who were still in this school, were studied again. In the meantime, these ten children, after leaving Grade I-A had been exposed to rapid-fire drills in the simple addition facts and the basic subtraction facts. The test-flash-card, still very widely used in this country, was their "torturer" almost daily. They were frequently subjected to games in which the fastest answers won.

After nearly two years of such speed experiences the ten children were tested individually by the writer. When the child was seated comfortably in a quiet room he was asked to give the answer to each of the sixty-three combinations, appearing in random order, as it was presented on a card. There was no suggestion of speed but an attempt was made to suggest leisure in the first test. The wrong answers were recorded in such a way as not to be noticed by the child. Following each error the correct answer was given by the writer as the card was turned and the learning side was exposed. After all the 63 combinations had been presented, the cards were shuffled, and each child was told to see how much faster he could do it. For three more times the child was so tested with the same cards. After each test he was told that he had done very well and was urged to try to go faster. The only reason that the writer did not ask the child for ten or twenty practices instead of five was his fear that the pupil would be greatly harmed by further nervous strain under such stimulation. Probably the last four performances were injurious, for all the children manifested strong nervous tension as they eagerly attempted to go faster. Practically all would leave their chairs on the third and succeeding trials and indicate considerable physical disturbances in an eager effort to force themselves to greater speed. Some shouted so loud that they could be heard by those on the floor above the testing room. There also was obvious evidence that the children were greatly annoyed by their mistakes.

One might expect these children to err more in a room alone with the writer than in their own classroom. If their errors on the first trial were caused by emotional disturbances incident to the new environment under which they worked, however, we should expect them to improve with adaptation and practice. On the other hand, if the errors increased with practice some other factors must have been at work.

What did these children do? Every one of them made more errors on one or all subsequent trials than on the first attempt. The wrong answers given by each child tell the story. They are presented there for the ten children in Table I. The letters (*a*), (*b*), (*c*), (*d*), (*e*) represent trial 1, 2, 3, 4, 5, respectively. The initials stand for the child's name.

Mere inspection of these wrong answers indicates that the speed suggestion under which the children worked caused them to increase their errors. It is highly probable that the

speed pressure under which these children had worked in the classroom made them more eager to speed during the test, more ready to respond to the first association that came to mind, and more ready, therefore, to make mistakes.

TABLE I

RECORD OF THE WRONG ANSWERS GIVEN BY EACH CHILD ON THE FIVE TESTS

	(a)	(b)	(c)	(d)	(e)
J. B.	4 6 / 3 3 / 8 8	6 6 7 4 / 4 2 2 2 / 6 9 7 7	7 5 4 6 2 / 2 1 3 2 2 / 8 5 8 7 2	6 6 4 6 3 2 5 5 3 / 0 1 3 4 3 2 0 5 4 / 9 6 8 6 3 2 10 5 8	5 5 1 6 4 / 0 2 5 2 3 / 10 8 5 7 8
V. A.	5 / 2 / 8	5 7 9 4 8 / 1 2 1 4 1 / 7 8 9 10 8	5 1 4 6 / 1 9 4 3 / 7 9 4 10	5 6 3 6 / 2 2 1 1 / 8 7 3 6	1 6 5 5 2 / 1 0 1 4 7 / 1 0 7 10 10
G. W.	5 / 1 / 5	7 6 3 7 / 2 4 2 1 / 10 6 3 7	3 7 5 2 5 / 1 3 5 2 3 / 3 7 5 2 5	5 2 5 5 5 / 2 5 3 4 5 / 5 5 5 5 0	5 5 4 5 / 4 5 0 2 / 5 5 7 5
D. F.	No errors.	3 6 8 / 5 1 2 / 5 8 8	4 7 6 / 1 1 1 / 4 7 6	6 7 / 1 1 / 8 7	9 2 7 2 5 / 1 2 3 2 5 / 9 2 7 2 5
E. I.	3 7 5 / 1 3 3 / 3 7 5	3 9 6 2 / 1 1 1 2 / 3 9 6 2	7 7 0 7 7 4 2 / 1 2 6 3 1 4 2 / 7 6 0 7 7 4 2	7 8 7 1 8 / 2 2 3 1 1 / 7 8 7 1 10	7 2 1 1 7 1 1 2 7 / 1 7 6 8 2 8 4 2 3 / 7 7 8 10 7 10 6 2 7
M. J.	6 / 2 / 6	2 8 / 2 1 / 2 7	1 2 / 8 2 / 7 10	3 5 / 6 1 / 3 7	2 9 / 2 1 / 9 11
M. T.	4 5 / 2 2 / 8 5	4 3 5 6 3 / 2 2 2 2 4 / 5 7 8 6 5	5 7 / 2 1 / 6 7	5 6 2 6 / 2 1 5 2 / 8 6 2 6	5 1 2 5 / 2 3 1 5 / 8 3 4 5
S. F.	3 / 6 / 8	3 6 2 9 7 / 6 3 2 1 3 / 8 8 2 11 9	7 2 4 6 8 / 1 6 4 3 2 / 7 6 4 3 11	3 6 2 1 / 3 2 7 6 / 3 6 8 8	1 1 3 3 / 1 7 4 7 / 4 9 9 8
B. T.	4 8 / 1 2 / 6 8	2 1 / 2 8 / 2 10	3 2 5 / 1 2 2 / 3 2 8	3 4 / 1 1 / 3 6	2 2 6 4 / 2 3 2 3 / 2 3 6 10
Y. Y.	2 / 4 / 8	3 5 / 5 2 / 9 8	8 7 4 / 1 3 2 / 8 9 7	No errors.	7 / 3 / 9

One child increased his errors from two to nine errors; another, from one error to two errors; but Y. Y., who made one mistake in the first trial, made three in the third, and none in the fourth. J. B. made most errors in the fourth performance; M. T., in the second; G. W., in the third and fourth; V. A., in the second and fifth; M. J., in the second, third, fourth, and fifth; S. F., in the second and third; Y. Y., in the third; and D. F., E. I., and B. T., in the fifth trial. In the first trial, one child made no errors; two made two; one made three; and five made only one error. For the five successive trials the total number of errors by the ten children were respectively fourteen, thirty-six, thirty-nine, thirty-seven, forty-three. On the average, the errors increased from 1.4 in the first trial to 4.3 in the fifth. If one counts the amount of greatest increase in any subsequent trial over the first trial, the average increase is from 1.4 to 5.2.

A strong tendency was apparent for errors to persist. Thirty-one percent of all the errors by the ten children recurred from one to four times in subsequent trials. Practically all these errors recurred in exactly the same way, that is, the combination not only was answered wrong again but was answered wrong in exactly the same way as before.[1]

Perhaps it would have been more economical if the errors for each pupil had been bunched. From six to seventeen combinations were incorrect; the average for the ten children was 11.6. It is highly probable that the child who got seventeen wrong had made an error on each of those seventeen combinations in the classroom many times. If one counts all errors, regardless of their repetition, there was an average of 16.9 errors per child in the total five trials. Even if one counts 11.6 errors as the correct average, these children made mistakes on more than 18 percent of the sixty-three combinations studied. These are the same children, it will be remembered, who had answered all the combinations correctly two years earlier. This is a heavy penalty for the child to pay for being in school two years!

It appears that these children in attempting to answer rapidly became confused and often responded without seeing the whole combination. There was a strong tendency to answer in terms of one of the numbers to be added; for example, $6 + 1 = 6$, $5 + 5 = 5$. Fifty-four percent of all the errors made in the total five trials by the ten children were of this sort. One pupil, with a total of twenty-eight errors in the five trials, made twenty-two such errors. The lowest number of this kind of errors made by any one child is one, and he made but seven errors in all.

In the child's effort to respond quickly, the first number seen seems to set off the response in an automatic, mechanical fashion. The child answering in this way has undoubtedly done so many times before. Only a speed-provoking atmosphere would be likely to produce such behavior.

One may conclude that the loss to learning efficiency from the strong speed pressure as applied to the simple number combinations in arithmetic under which many children must work in school today is appalling. This loss is in addition to the obvious discomfort incident to the modern mania for speeding in the classroom.

THE BUREAU OF EDUCATIONAL RESEARCH IN 1927-28

BECAUSE the work of the Bureau of Educational Research at Ohio State University is carried on with the cooperation of the school people in all sections of the State, it seems apropos to review the Bureau's activities for the year 1927-28. Elsewhere in this issue are reported the surveys, conducted by Dr. T. C. Holy, and in the next issue of this Bulletin will be reported a study conducted by the Appointments Division.

APPOINTMENTS DIVISION

Under the direction of the new head of this division, Dr. E. W. Anderson, the Appointments Division has been completely reorganized. Records have been installed to show

[1] Myers, Garry Cleveland. "Persistence of Errors in Arithmetic," *Journal of Educational Research*, 10:19-28, June, 1924.

the qualifications of each candidate, the kinds of calls received from superintendents and boards of education, the distribution of such calls, and the number and percent of placements in each field of service. A continuous study of the supply of trained teachers in relation to the demand for them is now being maintained by the Appointments Division.

EDITORIAL DIVISION

The Editorial Division might be called the publicity department of the Bureau. Through the EDUCATIONAL RESEARCH BULLETIN and the series of monographs, which publications are directed by the Editorial Division, activities of the Bureau are made known to people both within and outside the State. In the Bulletin, educators throughout Ohio find a place for reporting projects and researches which they have carried on in their schools. These reports help to stimulate interest in research in other schools. During the past year, fifteen of the articles which appeared in the Bulletin were written by people outside the University.

Eighteen issues of the Bulletin, ten issues of the *Journal of Educational Research*, the *Proceedings of the Seventh Annual Ohio State Educational Conference*, and two issues of the series of "Bureau of Educational Research Monographs" have been edited and proofread by the members of the Editorial Division since September, 1927. The last monograph published in the series, *Attendance at Kindergarten and Progress in the Primary Grades*, reports a research project which was carried on by Miss Josephine MacLatchy, head of the Editorial Division.

REFERENCE DIVISION

Through the Reference Division, the Bureau is constantly assembling material on educational subjects for persons who are preparing reports, articles, addresses, term papers, and so forth. During the current year more than seven thousand pieces—books, periodicals, bulletins, catalogues, and pamphlets—were added to the files of the reference library. This material, which is indexed by Miss L. Belle Voegelein and her assistants, is placed at the disposal of faculty members, students, and visiting school people.

At the request of persons seeking information on school subjects, fifty-nine formal bibliographies comprising 3,853 entries were prepared this year. The largest bibliography—on the platoon school—had 558 entries; one on college teaching contained 239 titles; and one on junior high-school mathematics, 202 entries. These requests come from persons outside the State as well as from Ohio people. In many instances the outside calls are not filled, but if the topic suggested is an important one, the librarian complies with the request.

Miss Voegelein's library project, representing four or five years of effort, was completed during the past year and published by the Ohio State University Press. The work, whose title is *List of Educational Subject Headings*, has been favorably criticized and reviewed in educational publications.

RESEARCH ACTIVITIES

A comparison of kindergarten and non-kindergarten children in the primary grades. (*Project 3*)—The report of this project, which has been under way for four years, recently came from the University Press as Monograph No. 8 of the Bureau of Educational Research Monograph Series.

For what are teachers paid? (*Project 55*)—The results of this extensive survey, carried on by J. A. Baer, are

given in a special number of the EDUCATIONAL RESEARCH BULLETIN for May 30, 1928. As a basis of study for this project, cards from a previous project carried on in the Bureau of Educational Research were used. On these cards were data for the year 1923-24 concerning salary, experience, and training for all teachers; and, in addition, the teaching load of each teacher in the junior and senior high schools was given. In this study, sex, type of position, and experience were the salary determiners. Mr. Baer summarizes his results in the special number of the Bulletin by saying that, in general, men receive higher salaries than women even in the same subject, that they do not have more experience or training, and that they do not carry a heavier teaching load. There is a significant variation among the groups of subjects in salary, experience, training, and teaching load.

Junior and senior high-school English. (*Project 60*)—This project has been continued for another year. A request for additional letters was sent out to a large number of schools and a fair response received. After a careful analysis of these letters, certain conclusions have been reached. These are: first, certain phases of formal instruction in letter-writing are not taught to the extent that they are used correctly by children when writing to their friends, even by the end of the senior high school; second, quite amazing misuses of English are found to occur in all grades.

Teacher personnel problems. (*Project 61*)—This project has been completed by J. A. Baer, research assistant, who presented the results of his investigations in the form of a Doctor's dissertation. Among the outstanding facts revealed by the careful study are: first, there is widespread sentiment that women are better teachers in the elementary grades than are men; second, there is a strong feeling on the part of many, especially men administrators, that the number of men teachers should be increased; third, a series of correlations between the proportion of men teachers and certain situations which seemingly might be affected by men teachers, rather than women teachers, tend uniformly to be very low, if not actually negative.

Curriculum offerings in the high schools of Ohio.—A study of the annual reports of high-school principals with the Ohio State Department of Public Instruction has been made by a graduate student under the direction of Dr. E. J. Ashbaugh. The results will be published by the United States Bureau of Education.

Effectiveness of the radio as a means of instruction.—Questionnaires were prepared and certain data gathered, but no definite results were reported.

Higher education in the South.—The purpose of this study—which is being worked out by J. L. La Poe, a research assistant—is to determine the ability and effort of the twelve states included in the area served by the Association of College and Secondary Schools of the Southern States to maintain state institutions of higher learning.

Ohio's support of higher education.—A report of this project appeared in this Bulletin on May 2, 1928. The data show that, during the six-year period from 1920-26, Ohio supported its three state universities less than three-fourths as well as its ability would warrant as compared with a group of seven North Central States. The work was carried out under the direction of Mr. La Poe.

Pennsylvania's support of higher education.—In this study, which is somewhat similar to the Ohio study, Pennsylvania's ability and effort were

measured against the combined ability and effort of Illinois and Ohio. The results of this study carried on by Mr. La Poe will appear in a future issue of the Bulletin.

The senior high-school principal and his greatest problems.—The two chief purposes of this study are, first, to learn something of the professional status of senior high-school principals, and second, to have them state what they consider their most difficult administrative and supervisory problems.

School procedures common in unified kindergarten primary programs. (Project 23).—This project comprises a study of the actual school procedures and equipment found in school systems in which some attempt is being made consciously to articulate the instruction given in the kindergarten and primary grades. Miss MacLatchy is carrying on this investigation with the Research Committee of the International Kindergarten Union cooperating in an advisory capacity. A large mass of data has already been collected in connection with this study which will be continued for another year.

SCHOOL-BUILDING SURVEYS

Ohio State University, through the Bureau of Educational Research, has kept pace with the survey movement and has offered such service to communities in the State. Particular emphasis is given in these investigations to school-building and financial programs. The only expense to a community is that actually incurred in making the study, since the Bureau makes no charge for its services.

During the five years he was connected with the Bureau, the late Dr. P. R. Stevenson devoted a considerable portion of his time to school-building surveys. In the past year, Dr. T. C. Holy—Dr. Stevenson's successor—has also given much time to similar surveys, some of which have been in collaboration with Dr. E. J. Ashbaugh of the Bureau Staff. The communities which have requested this service and for whom comprehensive reports were made in 1927-28 were Lancaster, Marion, Middletown, Fremont, Lemon Township, and Butler County. These reports, ranging in size from fifty to one hundred forty pages, have dealt in the main with six major facts about the educational problem of a community: the character and growth of the city, the school organization which the board of education expects to follow, the school population, the evaluation of the present plant, school-building needs, and the financial ability of the district together with a detailed financial program. The total cost of such a survey report, including lantern slides for presenting the data, has not exceeded three hundred dollars in any of these school systems.

The presentation of the complete report to the board of education of a community does not necessarily mean the end of the Bureau service. As a matter of fact, a detailed recommendation on the room requirements for a junior high school which will accomodate nine hundred pupils has just been sent to a school system expecting to erect such a building. Floor plans and equipment prospectuses have been studied and constructively criticized for a number of communities during the year.

In addition to these reports, visits were made and conferences held with the boards of education of Ada and Canal Winchester on school-building problems. Dr. Holy and Dr. Ashbaugh participated in the survey of Kent Normal School made by Dr. B. R. Buckingham at the request of Mr. Clifton, the state director of education.

THE DALTON DEMONSTRATION SCHOOL

WITH the opening of the Summer Quarter, 1928, the Department of Principles of Education inaugurated its first Demonstration School. This school, which in its first summer demonstrated the Dalton Laboratory Plan in the elementary and junior high-school grades, was entirely successful in providing a demonstration of modern methods of teaching, and it will be an integral part of the program in future summers.

In carrying out the demonstration, the Department fortunately secured Miss Helen Parkhurst, originator of the Dalton Laboratory Plan, to direct the school. Miss Parkhurst was assisted by an excellent staff of teachers from the parent school in New York City. The school was operated on an eight-weeks schedule overlapping the two terms of the Summer Quarter.

The success of the Demonstration School must, of course, be measured first of all in terms of the children. Their interest and enthusiasm as they approached a laboratory plan of work was entirely obvious. The success must also be measured in some degree, at least, by the attitude of the parents toward the demonstration. A questionnaire addressed to parents brought replies that indicated entire satisfaction with the work of the school. Most of these children had come from the normal public-school organization and the response of the parents indicated that they appreciated, above everything else, the opportunity for individual work provided in the laboratories.

All grades, with the exception of the fourth, were organized in terms of the Dalton Laboratory scheme. Grade IV was treated as a one-room situation, using the sub-Dalton Plan to provide for child initiative, freedom, and the development of a responsible attitude toward work. During the final week of school, the work of Grade IV and of certain classes in history culminated in dramatic presentations before the school. These activities, together with projects in writing and geography, provided—beyond the regular school work—an opportunity for creative activity by the children. The plays presented were developed by the children and were not organized as "set pieces."

From the point of view of the campus the success of the school must also be subjected to a different measure. On this score it was clearly outstanding. It provided an opportunity for students in residence and for visiting school men from Ohio and other states to observe the Demonstration School as it actually operated. Each day during the entire eight-weeks session the school had its maximum of visitors. This provision for observation made it possible for classes on the campus to turn to actual practice in giving body to theoretical approaches to educational problems. The Department of Principles and the University owe an expression of appreciation to the Columbus Public School system for its generosity in providing the Indianola School, just two blocks from the campus, as a location for the Demonstration School. The building is spacious, and with the removal of the regular school equipment and the installation of that needed for laboratory procedure, the physical set-up—providing as it did both for freedom of movement on the part of students and on the part of observers—made an almost ideal situation for the conduct of this first Demonstration School.